

Long Island Botanical Society

Vol. 18 No. 1

The Quarterly Newsletter

Winter 2008

Contributions to the Status and Morphology of *Platanthera pallida*, Pale Fringed Orchis

Robert T. McGrath, Department of Science and Technology Education,
Northport- East Northport Union Free School District, Northport, New York, 11768

Author's Note: After reading the excellent book review prepared by Eric Lamont in the summer issue (vol. 17, 2007) of the LIBS newsletter on the *Wild Orchids of the Northeast: New England, New York, Pennsylvania, and New Jersey* by Paul Martin Brown, I immediately went on-line to purchase my own copy. When it arrived a few days later I too was extremely impressed with the attention to detail, wide range of supplementary material, photography, and beautiful illustrations. Of particular interest for me was Brown's recognition of two populations of *Platanthera* located in eastern Long Island as warranting endemic species status. These populations have long been considered to be *Platanthera cristata*, the yellow-crested orchid. Naturalists and botanists have long noted that the two eastern Long Island populations, located at Napeague and the Walking Dunes at Montauk differ from other populations of *P. cristata* because of their pale yellow coloration as opposed to the deeper orange normally found in the species. Brown first described these colonies as a valid species, *Platanthera pallida* in 1992 and he continues to describe them as endemic only to eastern Long Island from two sizable colonies in this latest publication (2007).

I was especially intrigued by this designation as I had studied these populations during the summers of 1982 and 1983 and found morphological aberrations not previously reported in the literature at the time. Being a young undergraduate full of vim and vigor and jumping from one research project to the next, I never completed preparing my findings for publication. The paper presented here represents an original accounting of the observations that I made at that time.

(Original MS) OBSERVATIONS ON AN ABERRANT POPULATION OF THE YELLOW-CRESTED ORCHID *PLATANTERA CRISTATA* by Robert T. McGrath

INTRODUCTION: During the first week of August, 1983 four populations of the crested yellow orchid, *Platanthera cristata* (Michx.) Lindl., were located in Suffolk County, Long Island, New York. Each of the populations appeared to correspond morphologically

to the description given by Correll (1950) for *Habenaria cristata* (Michx.) R. Br., and by Luer (1975) for *Platanthera cristata*, but contained, either partially or entirely, individuals that exhibited a light cream-yellow color similar to the variation noted by Carpenter (1959). A closer study of flowers collected from one of the populations revealed that it contained numerous individuals with supernumerary anthers and fusion of one or both of the lateral petals with the dorsal sepal (Fig. 1).

Teratological and floral abnormalities are seemingly rare in *Platanthera*. The only published report is that of an instance of carpellody, the transformation of a stamen to a pistil, in *Platanthera bifolia* (Rytz, 1921).

DISTRIBUTION AND HABITAT: *Platanthera cristata* is a coastal plain species inhabiting moist pine woodland clearings from eastern Texas northeast to Massachusetts and south along the Atlantic Coast to Florida. The four Long Island populations were located in similar habitats. A description of each population and its habitat follows:

Oakdale, – Approximately ten plants, first located on 9 August 1982 along a fire lane (these plants were mowed prior to blooming in 1983) in Pine Barrens habitat. These individuals were found growing in moist sandy loam in open sunlight, in association with *Platanthera blephariglottis* (white fringed orchid), *Drosera rotundifolia* (roundleaf sundew), *Carex* sp. (sedge), and *Clethra alnifolia* (sweet pepper bush). All of these orchid flowers exhibited a pale canary-yellow color.

Sag Harbor, – Approximately 60 plants first seen on 5 August 1983. These plants were found growing in moist sandy loam along a roadside ditch in full sun, and under a dense tree canopy of *Pinus rigida* (pitch pine) in association with *Rhexia virginica* (meadow

(cont. pg 3)

Long Island Botanical Society

Founded: 1986
Incorporated: 1989

The Long Island Botanical Society is dedicated to the promotion of field botany and a greater understanding of the plants that grow wild on Long Island, New York.

Visit the Society's Web site
www.libotanical.org

Executive Board

President

Eric Lamont 631-722-5542

Vice President

Andrew Greller 516-364-9377

Treasurer

Carol Johnston 516-676-6648

Recording Secretary

Barbara Conolly 516-922-5935

Corresponding Secretary

John Potente 631-361-6756

Committee Chairpersons

Local Flora

Steven Clemants 718-623-7309

Field Trips

David Laby 631-751-0366

Programs

Rich Kelly 516-354-6506

Membership

Lois Lindberg 516-022-0903

Conservation

Bill Titus 516-671-7351

Education

Mary Laura Lamont 631-722-5542

Hospitality

Kathleen Gaffney 516-742-4019

Zu Proly 516-676-4023

Dorothy Titus 516-671-7351

Newsletter Editor

Margaret Conover 631-357-3065

Webmaster

Donald House

libswab@yahoo.com

Society News

Members are reminded to send in their 2008 dues as soon as possible.

At the November meeting, Treasurer Carol Johnston announced that last year's expenses exceeded income by a substantial amount. The design, printing, and postage for the newsletter cost nearly \$3000 annually. In order help the society return to a balanced budget, we are making some changes to newsletter production. Skip and Jane Blanchard will help with editing and proofreading the newsletter and Margaret Conover will produce the layout. The present issue is the first newsletter to reflect these changes. Readers' comments are invited.

The last few issues of the newsletter are presently available on our website as pdf files. We are in the process of scanning back issues so that they can also be made available. Special thanks to Barbara Conolly for locating copies of missing back issues. Graduate student Camilo Salazar is compiling an index to the plant species mentioned in back issues of the LIBS newsletter. This index will be published, along with an index of authors and titles, as a future issue of the newsletter.

LIBS is planning a publication entitled, "Tidal Marshes of Long Island, New York." John Potente will serve as editor. Some excellent articles have already been submitted. The Executive Committee has authorized \$1500 toward this publication and additional funds are being sought.

Announcements

Carol Johnston announced that former LIBS president Bob Zaremba and his wife Danielle welcome visitors to their guest house and antique shop in Chatham on Cape Cod. Barbara Conolly recommended the guest house highly as she has stayed there.

Vince Puglisi has offered to organize a ten-day trip to Costa Rica in January or February of 2009. Those interested should contact him.

Andy Greller stated that the inventories he had done of Alley Pond Park, Cunningham Park and Forest Park in Queens in 1977 need updating and seeks others who would like to work on that project with him.

The Northeast Natural History Conference will be held in Albany on April 17 and 18, 2008. Details at <http://www.nysm.nysed.gov/nhc/>

Eric Lamont has a chapter in "A Natural History of New York City Parks and Great Gull Island" published by the Transactions of the Linnaean Society in Sept. 2007. To order, send a check or money order for \$25 payable to: The Linnaean Society of New York (attn: Tom Endrey) 15 West 77th St., New York, NY 10024.

Requests for information

Julie Simpson, of Brown University, seeks field observations of populations of water hyacinth (*Eichhornia crassipes*). Contact her at 401-863-1266 or juliet.simpson@gmail.com

Polly Weigand seeks anecdotal reports of your experience with successful (and unsuccessful) methods for eradicating invasive plant species. Contact her at (631) 727-2315x3 or PollyW@suffolkcountyny.gov

On behalf of the Smithsonian, Eric Lamont seeks information about Eine Hellstrom, a botanist who apparently collected on Long Island in 1928-29.

beauty), *Bartonia virginica* (yellow screwstem), *Carex* sp. (sedge), *Polygala polygama* (racemed milkwort), and (under dense tree canopy) *Kalmia angustifolia* (sheep laurel), *Comptonia peregrina* (sweet fern), *Myrica pensylvanica* (bayberry), and *Ilex glabra* (inkberry). The perianths of the individuals in this population exhibited two distinct color variations, a deep yellow-orange and a light cream-yellow. Both color variations existed along the road as well as under the dense tree canopy, with no distinguishable preference.

Napeague, – Approximately 1000 plants first seen on 5 August 1983 and then re-visited on 12 August 1983. These individuals were found growing in damp sandy loam under a stand of *Pinus rigida* in association with *Cypripedium acaule* (pink lady's slipper). All individuals exhibited a light cream-yellow color.

Montauk, – Approximately 500 plants first seen on 12 August 1983. All of the plants were found growing in dry sandy loam under a stand of *Pinus rigida* and *Quercus alba* (white oak), and in association with *Arctostaphylos uva-ursi* (bearberry), *Cypripedium acaule*, and *Panicum* sp. (panic grass). Flowers of all of the individuals were pale creamy-yellow in color.

All four populations were previously known, and had been documented by earlier collectors. Specimens deposited at the New York Botanical Garden by Roy Latham and labeled *P. cristata* (Latham 6992, 6993) contain population descriptions and localities very similar to the Napeague and Montauk populations described above. Another locality documented by Latham (Latham 7308, 7490 at NYBG) is described as follows: East Hampton, Long Island, colony of one hundred plants, in Pine Barrens Swamp. On 7 Aug 1888, Arthur K. Harrison collected *P. cristata* from "Sag Harbor" and noted, "1 plant with orange flowers, 2 plants with lemon flowers" (voucher specimen at Harvard Univ. Herbaria; Lamont, personal communication, 2007). On 1 Aug 1951, Roy Latham, C.K. Brooks & H.F. Dunbar collected *P. cristata* from "dry barrens near Montauk Point", and noted "flowers lemon yellow; ? x *H. blephariglotis* (which is not near)". On 10 Aug 1948, C.S. Bryan collected it from "Montauk Point", and noted "abnormal in the flower color which is cream-color or light sulphurous yellow" (Voucher specimens of both latter collections housed at Harvard Univ. Herbaria; Lamont, personal communication, 2007).

METHODS AND OBSERVATIONS: Flowers from the three populations observed blooming in August 1983 were collected by randomly walking through each colony and removing flowers from various plants. Specimens were fixed in 45% ethyl alcohol, 45% distilled water, 5% glacial acetic acid, and 5% formalin. There was no attempt made to correlate

plant characters and flowers during collection. Measurements at 75X magnification were made of the spur length, dorsal and lateral sepal width and length, petal length and width, and lip length, and these were found to be compatible with the measurements reported by Correll (1950). These results are shown in Table 1.

Table 1. Measurements (mm.) of floral characters in Long Island populations of *Platanthera cristata*.

Characteristics	Correll Range	Sag Harbor	Napeague	Montauk
Lip width	----	2	2	2
Dorsal sepal length	3-5	4	4	4
Dorsal sepal width	2-3	2.5	4	2.4
Lateral petal length	2-4	3	3*	3
Lateral petal width	2-4	3	2.5*	3
Lateral sepal length	3-4	3	3	4
Lateral sepal width	2-3	3	2.75	2.5
Spur length	5-10	6	6	----
* when present				

As described by both Correll and Luer, the dorsal sepal of *P. cristata* is characteristically elliptic to suborbicular, with a slight notch at the obtuse apex. During analysis of flowers collected from the Napeague colony, however, numerous individuals were noted which showed fringing on either the right, left, or both sides of the dorsal sepal (Fig. 1).



Figure 1. Diagrammatic line drawings of dissected flowers from the Napeague colony showing various forms of dorsal sepal fringing.

In all instances where fringing occurred, the lateral petal on the fringed side was absent. Furthermore, a thickened tissue region running the vertical length of the dorsal sepal, approximately 0.5 mm from the fringed edge was observed. Of the 72 flowers collected from the Napeague colony, 11 displayed sepal fringing on both sides and had no lateral petals; ten displayed sepal fringing on the right side and had no right lateral petal; eight displayed sepal fringing on the left side and had no left lateral petal; and 42 displayed a typical part arrangement for *P. cristata*. These observations lead to the conclusion that the aberrant fringing on the dorsal sepal is the result of the developmental fusion of the dorsal sepal with one or both of the lateral petals.

In addition to aberrations on the dorsal sepal, at least four flowers were noted having supernumerary anthers arising on the column (Fig. 2). All anthers appeared to be sexually functional and pollinia were produced in all the anther sacs. Examination of various pollinia revealed a club-shaped mass of mealy pollen, caudicle,

and viscidium typical for *Platanthera*. Supernumerary anther sacs varied from four to eight per flower.

DISCUSSION: The lack of data on measurements of non-floral characters, on the cytology of the aberrant floral parts, on pollination success, and on the heritability of aberrant characters, prohibits determining the significance and nature of these findings. While the aberrations may have arisen through hybridization of *P. cristata* with another member of yellow orchid complex, this is not likely in the author's opinion. The occurrence in general of hybrids between *P. cristata* and either *P. ciliaris* (L.) Lindl. or *P. blephariglottis* (Willd.) Lindl. is widely accepted (e.g. Folsom, 1979; Luer, 1975; Correll, 1950; Ames, 1908; Small, 1903). Both of the latter species do occur on Long Island, but *P. ciliaris* is quite rare and is known from only a few localities, while *P. blephariglottis* is widely scattered in small colonies of no more than 60 plants.

The hybrid *P. ciliaris* × *P. cristata* was originally named as a species, *Blephariglottis chapmanii* Small (1903); was later treated as a hybrid *Platanthera* × *chapmanii* (Small) Luer (see Luer, 1975); and was most recently again treated as a species, *Platanthera chapmanii* (Small) Luer by Folsom (1979). Folsom revealed that the morphology of this cross is intermediate in most respects between that of *P. ciliaris* and *P. cristata*. However, as noted previously, flowers collected from all three Long Island colonies correspond morphologically to the description of *P. cristata*. Furthermore, the pollinating system for *P. cristata* would seem to be sufficiently different from *P. ciliaris* to prohibit cross pollination of the two species. As noted by Folsom (1979) and Smith and Snow (1976), pollination of *P. ciliaris* is effected primarily by butterflies of the family Papilionadae, the swallowtails, while bumble bees (*Bombus* sp.) are the primary pollinators of *P. cristata*. During my own investigations, a bumble bee was observed visiting approximately eight plants in the Napeague colony during a 30-second interval at approximately 7:00 PM on 12 August 1983. This individual was not captured, and while it can be considered only a potential pollinator, its role as a pollinator of *P. cristata* would seem likely given this observation and those made by Folsom (1979). In summary, evidence from structural characteristics, from pollination and from local scarcity all lead to rejecting *P. ciliaris* as a likely parent.

Though the hybrid *Platanthera blephariglottis* × *cristata* is more plausible based on the greater availability of *P. blephariglottis*, it would have to be disregarded for the morphological and geographic reasons given previously, and the fact that pollination in *P. blephariglottis* is effected primarily by night flying moths (Smith and Snow, 1976).

From my field observations, the Napeague colony does not appear to grow in a habitat that is drastically different from the other populations. Environmental factors such as soil acidity, nutrient content, and moisture were not recorded, however, and may play a role in the occurrence of these aberrations. In his study on abnormal flowers, Meyer (1966) noted the importance of the external environment in promoting metamorphosis of floral organs. Wherry, in his exhaustive studies on soil acidity and its effects on floral distribution (1918, 1920, 1927), suggested optimum soil acidity values for many orchids, but their significance and effect, if any, on plant morphology were not stated.

That a relationship exists between aberrant dorsal sepals and supernumerary anthers is unlikely, as all three variations of fringing, as well as the normal flower condition, were found on flowers with more than the ordinary number of anthers. Because of the random collection of the studied flowers, it is impossible to say whether the aberrations are genetic mutations, though Meyer (1966) concluded that non-heritable abnormalities are unlikely to be recorded unless they are produced by a stable physiological or environmental manipulating factor.

(2007 update) CONCLUSIONS, LITERATURE UPDATES AND PRESERVATION STATUS OF EXISTING POPULATIONS:

Although clearly differing in color from populations occurring elsewhere on Long Island, the colonies studied on eastern Long Island were considered to be *Platanthera cristata* up to and including the time when I first studied them in the summers of 1982 and 1983 (Lamont et al., 1988). In his original publication Brown (1992) concluded that the morphological differences, namely, the descending, recurved lips and very short spurs, that these individuals display warranted their being designated a separate species. The findings presented here, while not directly supporting Brown's claims, do indeed support the evidence that the eastern populations of this orchid, now formally referred to as *Platanthera pallida* P. M. Br. (1992), do in fact demonstrate certain distinctly different features from other populations of *Platanthera cristata*. Just how distinct they are, however, continues to be a matter of speculation. Brown (2007) recognized that Sheviak (2002) considers *P. pallida* to be a cline of *P. cristata*, meaning that while the plants described as *P. pallida* demonstrate changes in characteristics of the typical *P. cristata*, these changes are part of a broader set of changes which occur over a geographic area. Sheviak specifically noted that, while plants described as *P. pallida* are not sufficiently distinct to warrant separate species status from *P. cristata*, they are also not merely hybrids. Sheviak based this conclusion on the fact that

many of the features upon which Brown based his designation overlap both species (Sheviak, 2002). He further stated that he has obtained chromosome counts of *P. pallida* of $2n=42$, the same as *P. cristata* and the other species in the group. This would rule out the possibility that the colonies are allopolyploids, i.e. polyploids with chromosomes derived from different species (Sheviak, personal communication, 2007).

I believe the fusion between floral parts and the production of supernumerary anthers described here lend credence to Sheviak's claim. That is, that the colonies described by Brown as *P. pallida* are the product of a partially stabilized introgression, meaning they are the backcrossing of hybrids of two separate plant populations, the progeny of which are producing new genes into a wild population (Sheviak, 2002). This seems to be a far more plausible designation in my mind, especially given the fact that the populations in question could not be isolated from other populations of *P. cristata* for more than 5000 to 8000 years given the geologic history of Long Island and especially the region in which the colonies in question exist.

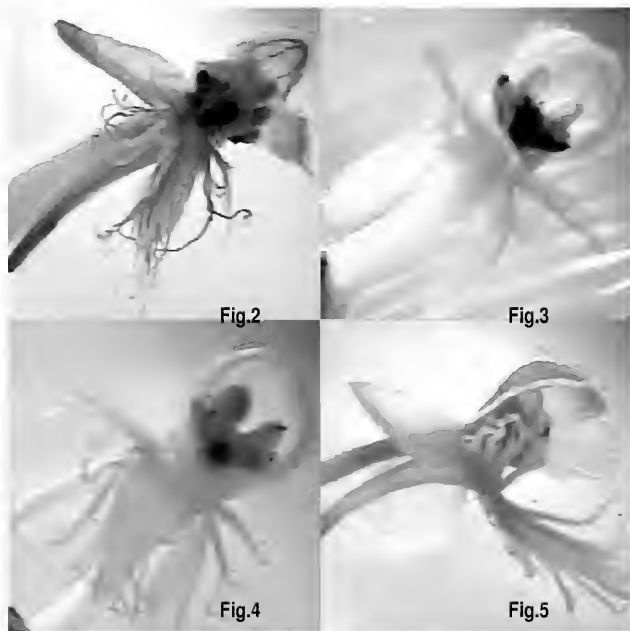


Figure 2. Flower of *P. cristata* showing multiple (supernumerary) anther sacs. Pollinia were typical for *P. cristata*. **Figure 3.** Flower showing fringing on the left side of the dorsal sepal and the presence of the right lateral petal. **Figure 4.** Flower showing fringing on both the left and right side of the dorsal sepal and the absence of both lateral petals. **Figure 5.** Flower of *P. cristata* taken from population located along Cordwood Road in Oakdale. Of particular note is the distinctly separate lateral petal and longer lip.

It is unfortunate that the flower samples that were collected in 1983 have almost all been destroyed. The specimen displayed in Fig. 2 is one of the few remaining samples still preserved. In an attempt to learn

whether or not the observations made in 1983 could be documented in the current population I revisited the colony in Napeague, referred to now by many as the Lazy Point orchids, on 11 August 2007. Racemes were removed from approximately 25 plants and fixed in 45% ethyl alcohol, 45% distilled water, 5% glacial acetic acid, and 5% Bio-Gard. Figs. 3 and 4 demonstrate fringing on the left (Fig. 3) and both (Fig. 4) sides of the dorsal sepal with the corresponding lateral petal(s) absent. No instances of supernumerary anthers were observed in the samples collected in 2007. The population located in Oakdale was revisited on 12 August 2007, along a fire lane known locally as Cordwood Road, in Connetquot River State Park. Four plants were found and all displayed a light creamy-yellow coloration. (*Platanthera blephariglottis*, which had been found in 1982 and 1983, could not be re-located during the 2007 visit.) Fig. 5 depicts a flower collected from this population, clearly showing a typical *P. cristata* with distinctly separate lateral petal and longer lip than those found in populations further east.

Of critical importance to discussions of the evolutionary status of the Long Island populations of *Platanthera* is the overall protection that each population so desperately needs. Of particular concern is the severe denuding that the Lazy Point (Napeague) population is suffering because of deer browsing. During the visit made on 11 August 2007, the population was estimated at 2000 to 3000 plants. While this is quite large, it is estimated that 7 out of every 10 plants in some spots were browsed. This is much more than has ever been observed in previous years. What long-term impact deer browsing will have on the population is uncertain, but considering the potential that these plants have for evolutionary study it would be a shame if they were to be diminished in abundance or, even worse, extirpated because of the over-population of white-tailed deer that Long Island is experiencing.

Acknowledgements – I want to thank Eric Lamont for encouraging me to revisit the work I began 24 years ago and for his constructive criticism of the manuscript; and Charles Sheviak for his manuscript review and for his data on the genetics of *Platanthera pallida*.

Literature Cited

- Ames, O. 1908. Notes on *Habenaria*. *Rhodora* 10: 70-71.
- Brown, P. M. 1992. *Platanthera pallida* (Orchidaceae), a new species of fringed orchids from Long Island, New York, U. S. A. *Novon* 2:308-311.
- _____. 2007. *Wild Orchids of the Northeast: New England, New York, Pennsylvania and New Jersey*; with original artwork by S. Folsom. University Press of Florida, Gainesville.

Carpenter, G. M. 1959. A Color variant of *Habenaria cristata*. Bull. Torrey Bot. Club 86: 137-138.

Correll, D. S. 1950. Native Orchids of North America. A New Series of Plant Science Books vol. 26. Chronica Botanica Company, Waltham, Massachusetts.

Folsom, J. P. 1979. The True Nature of the Putative Natural Hybrid *Platanthera* X *chapmanii* (Orchidaceae). M.S. Thesis, Vanderbilt University, Nashville, Tennessee.

Lamont, E. E., J. M. Beitel & R. E. Zaremba. 1988. Current status of orchids on Long Island, New York. Bull. Torrey Bot. Club 115: 113-121.

Luer, C. A. 1975. The Native Orchids of the United States and Canada excluding Florida. The New York Botanical Garden, Bronx, New York.

Meyer, V. G. 1966. Flower abnormalities. Bot. Rev. (Lancaster) 32: 165-218.

Rytz, W. 1921. Blütenanomalien. Sitzungsber. Bern. Bot. Ges. 7 Okt. In Mitth. Naturf. Ges. Bern 1921: xxv-xxvi.

Sheviak, C. J. 2002. *Platanthera*, pp. 511-571. In Flora of North America Editorial Committee (editors), Magnoliophyta: Liliidae: Liliales and Orchidales. Flora of North America. vol. 26. Oxford University Press, Oxford.

Small, J. K. 1903. Flora of the Southeastern United States. Published by the author, New York.

Smith, G. R. & G. E. Snow. 1976. Pollination ecology of *Platanthera* (*Habenaria*) *ciliaris* and *P. blephariglottis* (Orchidaceae). Bot. Gaz. 137: 133-140.

Wherry, E. T. 1918. The reaction of the soils supporting the growth of certain native orchids. J. Washington Acad. Sci. 8: 589-598.

_____. 1920. Soil acidity--its nature, measurement, and relationship to plant distribution. Rep. (Annual) Board Regents Smithsonian Inst. 2622: 247-268.

_____. 1927. The soil reaction of saprophytic orchids. J. Washington Acad. Sci. 17: 35-38.

Plant Sightings and Field Notes

On October 13, Peter Warny led a field trip to Clark Garden and Leeds Pond Preserve. In the upland part of the latter site was found invasive exotics including kudzu (*Pueraria lobata*) on the north edge and a new report of mile-a-minute weed (*Polygonum perfoliatum*). An interesting find was a good stand of Ravenel's stink-horn, (*Phallus ravenelii*) on wood chips under white pines. The salt water beach across the road gave us prickly pear (*Opuntia humifusa*), common saltwort (*Salsola kali*) and coast blite (*Chenopodium rubrum*).

Steve Young and Eric Lamont collected several specimens of *Chenopodium* this past August. Steve identified two of the collections as city goosefoot (*Chenopodium urbicum*) a native of Europe, and desert goosefoot (*Chenopodium pratericola*) a native of the western United States. According to the draft LIBS atlas of Long Island plants, the *C. urbicum* collection is a record for Suffolk County and only the second time reported from Long Island.

Guy Tudor reported 3 noteworthy plant species from the summer of 2007: 1) *Lachnanthes caroliniana*, Carolina redroot, from Calverton ponds on August 19th; this species is one of NY's rarest and is only known from two LI sites; 2) *Ipomoeahederacea*, ivy-leaved morning-glory, on Sept 17th from a farm field just off Hulse Landing Road (off Rte. 25A), between Sound Ave. and Rte. 25, east of Wading River; this report is a Suffolk Co. record and the first report east of Queens Co.; 3) *Physalis heterophylla*, clammy ground cherry, in bloom on Oct 14th, in disturbed soil bordering RR parking area at the end of Webb Street in Greenport (possibly introduced from soil dumped on berm at parking lot?); this species is rare on eastern Long Island.

LIBS Hosts Botanists from Niagara Area

By Rich Kelly

Ten members of the Niagara Frontier Botanical Society came to Long Island to botanize with members of the Long Island Botanical Society in late August, 2007. LIBS president, Eric Lamont, set up an agenda to include local rarities and interesting habitats that would be different from those they were familiar with from upstate.

On Wednesday, August 29th Mary Laura Lamont, joined by Rich Kelly, led a trip to the Fire Island National Seashore. After a pleasant ferry crossing to Sailor's Haven, the group walked to the Sunken Forest, passed by a bay side habitat, then visited various dune and swale communities. Birders in the group were happy to see Northern Gannets plunge diving not far off the ocean beach. The Niagara group was very easy to please as new things popped up for them on a regular basis. Some of the coastal plain species which brought the most interest for them were saltmarsh fleabane (*Pluchea odorata*), rose mallow (*Hibiscus moscheutos*), purple gerardia (*Agalinis purpurea*), Maryland golden-aster (*Chrysopsis mariana*), and beachgrass (*Ammophila breviligulata*). Of course, they were very impressed by the size of the American holly (*Ilex opaca*) at Sunken Forest. The Sunken Forest is classified as a maritime holly forest, which is a globally rare ecological community.

On Thursday morning, August 30th Mary Laura led a trip to Orient Beach State Park. Rich also came out for the day. Highlights here were a selection of beach species, topped by a couple of seabeach knotweed (*Polygonum glaucum*) in bloom. Then we walked through the

coastal oak forest to see eastern prickly-pear (*Opuntia humifusa*), post oak (*Quercus stellata*), blackjack oak (*Q. marilandica*), and *Q. x bushii*, the hybrid of blackjack and black (*Q. velutina*) oaks. The next stop was the salt marsh community, with its array of coastal grasses, and highlighted by the rare *Salicornia bigelovii*. A roadside stop, while leaving the park, netted sickle-leaved golden-aster (*Pityopsis falcata*) and a simultaneous view of three lighthouses (five in total for the day). The morning session was finished off by a visit to the very tip of Orient Point, for a great view of The Race and Plum Island, then mile-a-minute weed (*Polygonum perfoliatum*) back near the state park toll booth. It's extremely unfortunate that this invader has taken hold near the very tip of the North Fork.

In the afternoon, Eric Lamont spelled Mary Laura as the group headed back west. A quick stop at the beach near Dam Pond was made to see the leaves and bizarre fruits of horned poppy (*Glaucium flavum*). We then went to Moore's Woods in Greenport to search for crane fly orchid (*Tipularia discolor*) in fruit. Unfortunately, none could be found, but Eric pointed out green ash (*Fraxinus pennsylvanica*). Next was the nearby power line cut by Chapel Road for the rare swamp cottonwood (*Populus heterophylla*). Nice cardinal-flowers (*Lobelia cardinalis*) were in bloom at this site. Cranberry Bog County Park was the closer for the day, with little lady's tresses (*Spiranthes tuberosa*), arrow arum (*Peltandra virginica*), and common juniper (*Juniperus communis*) seen here, as well as the state rare Atlantic white-cedar (*Chamaecyparis thyoides*) swamp.

On Friday, August 31st, Eric led a whirlwind trip to numerous hot spots. He was joined by Rich, plus Barbara Conolly and Andy Greller. The first stop was a roadside spot in Southport (Flanders) which had screw-stem (*Bartonia paniculata*), the first of many state rare plants for the day. This was the beginning of what can only be called a mega day of botany on Long Island. Regular LIBS members who could have come out for the day missed a very special day of field work. Eric had scouted the next area a few days earlier with Steve Young of the NY Natural Heritage Program, and we went to the "Coastal Plain Poor Fen" at North Hubbard Creek Marsh to clean up on his advance work. Here we quickly and easily had seaside gerardia (*Agalinis maritima*), southern dodder (*Cuscuta obtusiflora* var. *glandulosa*), saltmarsh loosestrife (*Lythrum lineare*), southern seaside goldenrod (*Solidago sempervirens* var. *mexicana*), marsh fimbry (*Fimbristylis castanea*), seaside plantain (*Plantago maritima* subsp. *juncooides*), and arrow-

grass (*Triglochin maritimum*). Most of these are very local in New York, and the dodder and loosestrife are extremely rare. Then Rich, Barbara, and Andy led a foray up nearby Red Creek Fen in search of bog aster (*Aster nemoralis*). Although we were pushing the date a little, we were rewarded with 5 plants in bloom, plus the foliage of many others. Other highlights at this location were tawny cottongrass (*Eriophorum virginicum*), cross-leaf milkwort (*Polygala cruciata*), Canadian burnet (*Sanguisorba canadensis*), *Utricularia subulata*, and the rare smooth withe-rod (*Viburnum nudum* var. *nudum*). Some exploration was also done on the marsh opposite the outflow of Red Creek.

We then made a couple of quick stops at the dwarf pine barrens to show off the stunted pitch pines (*Pinus rigida*). The dwarf pine plains is yet another globally rare ecological community. Sheep's-bit (*Jasione montana*) was also noted here. Then we went on to the famous roadside bank on the south side of North Street in Manorville where we had *Polygala nuttallii* and the leaves and fruits of colicroot (*Aletris farinosa*). Further down the street we saw Guy Tudor's famous hoary vervain (*Verbena stricta*), and the group got in some work on Desmodiums and Lespedezas at the railroad crossing.

Next stop was Sandy Pond in Calverton for a variety of coastal plain pond specialties. These included pipewort (*Eriocaulon aquaticum*), round-pod water-willow (*Ludwigia sphaerocarpa*), hundreds of horned bladderworts (*Utricularia cornuta*), and thousands of purple bladderworts (*Utricularia purpurea*). Threadleaf sundew (*Drosera filiformis*) at this site was a very popular find for our guests. The last location visited was adjacent Block Pond which showed off broad-leaved arrowhead (*Sagittaria latifolia*), Engelmann's arrowhead (*S. engelmanniana*), and grass-leaved arrowhead (*S. graminea*).

The weather was superb for all three days of their visit, and the Niagara botanists were enthusiastic and appreciative. It was easy and fun to host them. Lots of great plants were seen, along with tremendous scenery, lighthouses, birds, and insects. I'm sure that the very special habitats/botanical communities of Long Island made a lasting impression on the group.

Join LIBS today!
Annual Membership is \$20 payable to:
Long Island Botanical Society

Mail your dues to:
Lois Lindberg, Membership Chairperson
6170 Northern Blvd.
East Norwich, NY 11732-1614

Upcoming Programs

Reminder: our schedule has changed, and there will be no meetings in January or February.

January 2008 --No meeting.

February 2008 --No meeting.

March 11, 2008* Tuesday, 7:30 PM

Members Night: Members are welcome to bring slides, stories, specimens, and tales of peculiar sightings of favorite plants. A great opportunity to show what you have found while exploring on Long Island or elsewhere. Please call Rich Kelly (516-354-6506) in advance to advise as to the approximate number of slides/images that you would like to show and preferred medium. Thanks.

Location: Bill Paterson Nature Center,
Muttontown Preserve, East Norwich

April 8, 2008* Tuesday, 7:30 PM

Greg Edinger: "The Ecological Communities of Long Island." From the nearly extirpated Hempstead Plains grassland, to the barrier dune ecosystem on Fire Island, to the globally rare dwarf pine plains, to the elusive sea level fen, to the maritime forests and bluffs at Montauk Point, this illustrated talk will show the diversity of natural communities of Long Island. Greg is the Chief Ecologist with the NY Natural Heritage Program. He is the lead editor of Ecological Communities of NY State, and wrote an article, that focused on the ecological communities of Long Island, which appeared in the summer 2006 LIBS newsletter.

Location: Bill Paterson Nature Center,
Muttontown Preserve, East Norwich

* Refreshments and informal talk begin at 7:30.
Formal meeting starts at 8:00 PM.
Directions to Muttontown: 516-571-8500